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| 09/909,901 | 07/23/2001 | Toshiki Murata | 31759-173994 | 9192 |

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Washington, DC 20043-9998

EXAMINER

HAN, QI

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| ART UNIT | PAPER NUMBER |
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2654

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,901

Applicant(s)

MURATA ET AL.

Examiner

Qi Han

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>07/23/2001</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the Information Disclosure Statement submitted on 07/23/2001 have been considered by the examiner (see attached PTO-1449).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification and Drawing

3. The disclosure is objected to because of the following informalities:
 - a. On page 1, lines 14-25, the description is unclear, it appears to have some grammar error within the long sentence. Appropriate correction or clarification is required.
 - b. On page 3, paragraph 4, the description is unclear, it appears to have some grammar error within the long sentence. Appropriate correction or clarification is required.
 - c. On page 15, paragraph 2, the terms “meaning!=person” does not show in any one of Fig. 6(a)-6(b). Appropriate correction is required either in the specification or in the drawing.
 - d. On page 13, lines 13-30 and Fig. 4, there is no definition or description in the specification for the label {} in the drawing. Appropriate correction is required.
 - e. On page 27, last paragraph, the referenced number “node 21-1”, “node 21-2” and the like do not show in the Fig. 21 or 22. Appropriate correction is required.

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f. On page 41, paragraph 4 and Fig. 33, applicant fails to clearly define “the central element” and how the features in “the central element” are exactly copied in the example (no any feature shows in the central element, except symbol *). Appropriate correction is required.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4-10,13, 17-23, 26-27,30-31 and 35-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, the limitation “the natural language processing apparatus according to claim 1 comprising...” in second element of the claim is unclear whether or not the applicant intends to start another dependent claim. If the answer is no, what difference between the two antecedent bases and which basis should be used in this claim? This leads the claim indefinite. As best understand, the limitation will be interpreted as “further comprising ...” hereinafter.

Regarding Claim 7, it recites the limitation “the normal priority” in lines 3-4 of the claim. There is insufficient antecedent basis for this limitation in the claim. As best understand, it will be interpreted as “a higher priority” hereinafter.

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Regarding Claim 8, the whole claim is unclear and indefinite because:

- a. the language “for evaluating ... capable of evaluating ...” is not positive limitation which can be interpreted as only intention to use or option to use;
- b. the limitation “evaluation and allotment means capable of ...” in the claim is not fully supported or specifically disclosed by the specification (see page 29, last paragraph, for example, there no “the sectional tree” in the specification);
- c. iii. the terms “the sectional tree” are not commonly used the terms in the art and lack antecedent basis in both the claims and the specification.

Further, based on above statement, this claim may also be considered to have an enabling problem under 35 USC 112 1st rejection. As best understand, the claim will be interpreted as “wherein a tree structure evaluation means for evaluating the priority between plural tree structures” hereinafter.

Regarding claim 9, the rejection is based on the same reason describe in sections b and c for claim 8, because the claim includes same or similar indefinite limitation(s) as claim 8, and it also inherit all the limitation of claim 8. Further, the limitation “reflect **the number of terminal numerals** constructing ...” is descriptive, and it also lacks clear defecation in the specification and antecedent basis in the claims. As best understand, the claim will be interpreted as “the tree structure evaluation means reflect the priority information in the natural language patterns applied to the tree structure and reflect terminal numerals constructing the tree different in the plural tree structures” hereinafter.

Regarding claim 13, the rejection is based on the same reason described in section c of claim 8, because the claim includes same or similar indefinite limitation(s) as claim 8.

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Regarding claims 5-6 and 10, the rejection is based on the same reason described for claims 4 and 8 respectively, because the dependent claims inherit all the limitations of their parent claims.

Regarding claims 17-23 and 26, the rejection is based on the same reason described for claims 4-10 and 13 respectively, because the claims recite same or similar limitation(s) as claim 4-10 and 13 respectively.

Regarding claim 27 and 31, the limitation “a **central element information** prescribing a **central pattern element** in a feature restriction or a feature propagation on the left and/or the right side” in the claims is indefinite since it not clearly defined in the claim and the specification (see the closest disclosure in the specification: page 41, paragraph 4).

Regarding claim 30, the limitation “logical operations can be **smoothly** achieved” lacks clear meaning and lacks specific description in the specification, which leads the claim to be indefinite. As best understand, the limitation will be interpreted as “logical operations can be achieved” hereinafter.

Regarding claim 35, the rejection is based on the same reason described for claims 27 and 30, because the claim includes same or similar indefinite limitation(s) as claims 27 and 30. Further, for the second paragraph of the claim, it is unclear which the action order should be taken “after converting ...” step, since there are two actions involved: “storing ...” and “read out ...”. Moreover, the limitation “the source dictionary in the pattern dictionary” is contrary to the Fig. 10, where the source dictionary is **not in** the pattern dictionary.

Regarding claim 37, the rejection is based on the same reason described for claim 35, because the claim includes same or similar indefinite limitation(s) as claim 35.

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Regarding claims 36 and 38, the rejection is based on the same reason described for claims 35 and 37 respectively, because the dependent claims inherit all the limitations of their parent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 14-15, 27-28 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan et al. (US 6,778,949 B2) hereinafter referenced as Duan.

As per **claim 1**, Duan discloses method and system to analyze, transfer and generate language expressions using compiled instructions to manipulate linguistic structures (title), comprising:

“dictionary reference means for picking up one or more natural language patterns applicable for the syntax analysis and/or the syntax generation among the natural language patterns prepared in a [pattern] dictionary [in advance]”, (Fig. 2a, combination of blocks 204 ‘dictionary’ and 216 ‘syntactic (syntax) analysis’, and combination of blocks 226 ‘dictionary’ and 228 ‘syntactic generation’; column 6, lines 24-46, ‘the feature structure’ and ‘part-of speech (POS)’, ‘database of lexical connector feature rules’ (reflect language patterns and stored in advance), ‘syntactic analysis module 216 combines the chosen feature structures (natural

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language patterns) into a feature structure that represents the content of the input'; column 7, lines 15-66, 'transfer module', 'example database');

"pattern inspection means for inspecting whether the applicable natural language patterns meet a tree structure or not", (column 6, lines 32-67, 'dictionary defines combinations of words (patterns)', 'evaluates (inspects) each feature structures', 'syntactic analysis (also corresponding to inspection) ... to create a syntax parse tree for the sentence'; column 7, lines 15-16, 'match (apply) source language slots of the input with source language in example database');

"pattern application means for applying the natural language patterns to the tree structure if the natural language patterns meet the tree structure", (Figs. 2.b-2c and column 7, line 29 to column 8, line 17, 'to match the input source sub-structures or slots ... in example database', 'checks if all sub-structures or slots of the input feature structure have found (met) a match', 'translation module uses the input feature structure... to build transfer generation tree 260', 'sub-trees', 'multiple transfer generation trees').

Duan does not expressly disclose "a **pattern** dictionary" for the analysis and generation of natural language pattern. However, this feature is well known in the art as evidenced by Duan himself who discloses example database 220 containing feature structure pairs in the source language and a target language (column 7, lines 19-20), which provides equivalent functionality as a pattern dictionary and similar structure as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Duan's example database for the analysis and generation, as taught by Duan, for the purpose of resulting transfer generation tree (column 7, line 59).

As per **claim 2** (depending on claim 1), Duan further discloses:

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“a pattern application condition is set on the pattern name and pattern component in all or a part of the natural language patterns prepared in a pattern dictionary in advance” (column 5, line 51 to column 6, line 23, ‘uses a source language dictionary to decompose the words into morphemes by identifying root forms, grammatical categories, thesaurus information, and other lexical features of the words’, wherein these information interpreted as a pattern application condition, ‘builds feature structure for each word’ that contains ‘feature-value pairs’, ‘e.g. [want] (pattern component) or NP[] (pattern name)’); and

“the pattern inspection means inspect whether the applicable natural language patterns meet a tree structure or not by referring to a pattern application conditions on the applicable natural language patterns”, (column 6, lines 42-49, ‘syntactic analysis module combines the chosen feature structures into the input sentence’ and ‘uses parsing grammar to create a syntax parse tree’; column 7, lines 25-41, ‘transfer module ...match (meet) source language slots...in example database’ and ‘uses the input feature structure...to build transfer generation tree 260’).

As per **claims 14-15**, they recite a method. The rejection is based on the same reason as described for claims 1-2 respectively, because the claims recite same or similar limitation(s) as claims 1-2, respectively.

As per **claim 27**, as best understand in view of the rejection under 35 USC 112 2nd (see above), the rejection is based on the same reason described for claim 1, because the claim recites same or similar limitation(s) as claim 1. In addition, wherein the claimed limitation “left side and right side list” corresponds to the ‘feature-value pairs’ (see Duan: column 5, line 57 to column 6, line 23 and column 7, lines 1-11); and the claimed limitation “a central element

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information” is broadly interpreted as ‘a number of nested linguistic representations’ (Duan: column 7, lines 13-15).

As per **claim 28** (depending on claim 1), Duan further discloses “the pattern application means restrict the feature to be transmitted according to the definition which is defined per the nonterminal numeral and terminal numeral in transmitting feature information” (Duan: column 7, line 38 to column 8, line 25, ‘the rule numbers within transfer (transmitting) grammar (defining the rules) ... applied to the input feature structure’, ‘transfer grammar rules added to tree are applied to the s-nodes’, ‘multiple sub-transfers (transmitting) created multiple transfer generation trees’, ‘r-node (non-terminal numeral)’, ‘leaf node (terminal numeral)’).

As per **claims 31-32**, they recite a method. The rejection is based on the same reason as described for claims 27-28 respectively, because the claims recite same or similar limitation(s) as claims 27-28, respectively.

7. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Suematsu (US 5,418,716).

As per **claim 3** (depending on claim 2), even though Duan discloses “plural natural language patterns” “are prepared in plural natural language patterns” with “the pattern application conditions” (Duan: column 6, lines 5-35), and “a tree structure with appropriate” “information decided through the pattern inspection means and the pattern application means” (Duan: column 6, lines 47-48 and column 7, lines 40-61), Duan does not expressly disclose the pattern “with different meaning information” on “meaning conditions”. However, this feature is well known in the art as evidenced by Suematsu who discloses system for recognizing sentence

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pattern and a system for recognizing sentence patterns and grammatical cases (title), comprising analysis features (pattern) of a word with multiple meanings (Fig. 4(a)). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically providing analysis features (pattern) of a word with multiple meanings, as taught by Suematsu, for the purpose of recognizing sentence patterns for machine translation systems (Suematsu: column 1, lines 11-17).

As per **claim 16** (depending on claim 14), the rejection is based on the same reason as described for claim 3, because the claim recites same or similar limitation(s) as claim 3.

8. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Saraki (US 5,903,858).

As per **claim 4** (depending on claim 1), even though Duan discloses “pattern evaluation means for evaluating the natural language patterns applicable for a tree structure”, (column 6, lines 34-35, ‘evaluates each feature structure (language pattern)’), Duan does not expressly disclose that “information on a **priority** of a application is attached to the natural language patterns” and “evaluating the language pattern ... according to the **priority information**”. However, this feature is well known in the art as evidenced by Saraki who discloses a translation machine for translating the original text (abstract), comprising ‘an improved syntax analysis component using the tree structure and word priority information’ (column 6, line 9-12) and ‘a word priority module’ (column 7, lines 15-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically

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providing word priority information for the analysis process, as taught by Saraki, for the purpose of offering the related word arrangement (Saraki: column 1, lines 11-17).

As per **claim 17** (depending on claim 14), the rejection is based on the same reason as described for claim 4, because the claim recites same or similar limitation(s) as claim 4.

9. Claims 6-10 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Saraki as applied to claim 4, and further in view of Su et al. (US 5, 418,717) hereinafter referenced as Su.

As per **claim 6** (depending on claim 4), Duan in view of Saraki does not expressly disclose “pass over the applicable natural language patterns other than the applicable natural language pattern with the highest priority when plural natural language patterns with the same pattern name and the same pattern application condition and **with different information on priority** exist”. However, this feature is well known in the art as evidenced by Su who discloses the well-known references using ‘predetermined priority order’ associating certain possibilities (column 4, lines 7-8), and ‘the selected senses are given higher priority when they are translated a second time’ (column 4, lines 15-16), which suggests using different information on priority for the translation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan in view of Saraki by specifically providing different priority for the translation process, as taught by Su, because using higher priority information would be obtain better likelihood for the correct translation.

As per **claim 7** (depending on claim 4), the rejection is based on the same reason as described for claim 6, because the claim recites same or similar limitation(s) as claim 6.

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As per **claim 8** (depending on claim 4), as best understood in view of rejection under 35 USC 112 2nd (see above), the rejection is based on the same reason as described for claim 6, because the claim recites same or similar limitation(s) as claim 6.

As per **claim 9** (depending on claim 8), Doan in view of Saraki and Su further discloses “reflect the priority information in the natural language patterns applied to the tree structure and reflect terminal numerals constructing the sectional tree different in the plural tree structures” (Doan: column 6, line 51 and column 8, lines 19-20, ‘leaf’ and ‘leaf nodes’ (corresponding to terminal numerals); Su: column 12, lines 6-60, ‘syntactic score’ and ‘probability’ can used to reflect a priority’, for an ordinary people skilled in the art).

As per **claim 10** (depending on claim 8), Doan in view of Saraki and Su further discloses “reflect the priority information in the natural language patterns applied to the tree structure and reflect the location of node related to a specified priority in the evaluation and allotment means.” (Saraki: column 14, lines 19-21, ‘the verb arrangement priority includes the vocabulary data regarding the position of an inserted adverbial phrase...’).

As per **claims 19-23** (depending on claim 14), the rejection is based on the same reason as described for claims 6-10 respectively, because the claims recite same or similar limitation(s) as claims 6-10, respectively.

10. Claims 11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Fukumochi et al. (US 5,644,774), hereinafter referenced as Fukumochi.

As per **claim 11** (depending on claim 1), Duan does not expressly disclose “user registration means of natural language patterns”. However, this feature is well known in the art

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as evidenced by Fukumochi who discloses a machine translation system comprising 'registration means 2' (Fig. 2) and teaches that 'a user can additionally register a header and a translated expression (corresponding to the language pattern) ...or update the dictionary registration' (column 7, lines 5-7), which reads on the claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically providing a mechanism for user registration of the expression (pattern), as taught by Fukumochi, for the purpose of newly or additionally registering terms in a translation process (Fukumochi: column 6, lines 10-14).

As per **claim 24** (depending on claim 14), the rejection is based on the same reason as described for claim 11, because the claim recites same or similar limitation(s) as claim 11.

11. Claims 12-13 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Fukumochi in view of Nakayama et al. (US 5,687,383), hereinafter referenced as Nakayama.

As per **claim 12** (depending on claim 11), Duan in view of Fukumochi does not expressly disclose that "the priority higher than that of the natural language patterns of system registration is set on the user registration of natural language patterns". However, this feature is well known in the art as evidenced by Nakayama who discloses translation rule learning scheme for machine translation (title), and teaches that 'the user can select the marked translation rule candidate (reflect language pattern)..., with a higher priority' and 'the selected translation rule candidate will be stored ...in the translation rule registration buffer' (column 8, lines 40-47), which suggests the other candidate has lower or normal priority, so that the combined system has

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capability of implementing the functionality as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan in view of Fukumochi by specifically providing a higher priority for an item related to user registration, as taught by Nakayama, for the purpose of enabling the user to customer the translation results (Nakayama: column 1, lines 25-26).

As per **claim 13** (depending on claim 11), the rejection is based on the same reason as described for claim 12, because the claim recites same or similar limitation(s) as claim 12.

As per **claims 25-26** (depending on claim 24), the rejection is based on the same reason as described for claims 6-10 respectively, because the claims recite same or similar limitation(s) as claims 12-13, respectively.

12. Claims 29 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Tokuume et al. (US 5,101,349), hereinafter referenced as Tokuume.

As per **claim 29** (depending on claim 27), Duan does not expressly disclose “the pattern inspection means and the pattern application means execute a pattern-meeting inspection on and a pattern application to **feature variable** applied as a feature restriction in natural language patterns”. However, this feature is well known in the art as evidenced by Tokuume who discloses nature language processing system, and teaches that ‘the variable *x represents on free case element’ (column 17, lines 29-30 and Fig. 16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically providing a variable for feature structures (patterns), as taught by Tokuume, for the purpose of generating a phrase structure for a sentence by applying grammatical rules (Tokuume: abstract).

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As per **claim 33** (depending on claim 31), the rejection is based on the same reason as described for claim 291, because the claim recites same or similar limitation(s) as claim 29.

13. Claims 30 and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duan in view of Matsui (US 5,151,857).

As per **claim 30** (depending on claim 27), as best understand in view of the rejection under 35 USC 112 2nd (see above), Duan does not expressly disclose “the natural language patterns registered in the pattern dictionary hold the feature restriction information in the form that **logical operations** can be achieved”. However, this feature is well known in the art as evidenced by Matsui who discloses dictionary linked text base apparatus (title), and suggests using ‘AND condition or OR condition process (logical operation)’, including morpheme level and syntactical level searching (column 8, lines 23-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically providing AND condition or OR condition process (logical operation) for a dictionary, as taught by Matsui, for the purpose of obtaining search result with text identifier limited by the condition process (Matsui: column 8, lines 29-33).

As per **claim 34** (depending on claim 31), the rejection is based on the same reason as described for claim 30, because the claim recites same or similar limitation(s) as claim 30.

As per **claim 35**, Duan discloses method and system to analyze, transfer and generate language expressions using compiled instructions to manipulate linguistic structures (title), comprising:

“a source dictionary which stores the natural language patterns all of which described in a text data mad has in some cases a central element information prescribing a central pattern element in a feature restriction or a feature propagation on the left and/or the right side”, (Fig. 2a, block 204 ‘dictionary’; column 5, line 50 to column 6, line 40, ‘source language dictionary’, ‘feature structures (natural language patterns)’ and ‘feature-value pairs’ (including left and right list), ‘lexical connector feature rules (restriction); column 7, lines 13-21 ‘feature structure in English and Japanese’(inherent include language name or corresponding identifier), ‘a number of nested linguistic representations’ that is broadly interpreted as central element information or central pattern element);and

“a restriction information form conversion means for storing a feature restriction information of the natural language pattern read out from the source dictionary [in the pattern dictionary] after converting a feature restriction data formed [to achieve logical operation] smoothly”, (Fig. 2a, combination of blocks 216 ‘syntactic (syntax) analysis’ and 212 ‘parsing grammar’, 222 ‘transfer’ and 218 ‘transfer grammar’; column 6, lines 28-46, ‘database of lexical connector feature rules’ (storing a feature restriction information); column 7, line 40-66, ‘build transfer (converting) generation tree’ (inherently storing the transfer result)).

Duan does not expressly disclose “to achieve **logical operation**”. However, this feature is well known in the art as evidenced by Matsui who discloses dictionary linked text base apparatus (title), and suggests using ‘AND condition or OR condition process (logical operation)’, including morpheme level and syntactical level searching (column 8, lines 23-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Duan by specifically providing AND condition or OR condition process

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(logical operation) for a dictionary, as taught by Matsui, for the purpose of obtaining search result limited by the condition process (Matsui: column 8, lines 29-33).

As per **claim 36**, Duan in view of Matsui further discloses:

“a feature definition storage part for storing definition information on feature information consisting of feature name and feature value for restriction (Duan: column 5, lines 51-66, ‘linguistic data structure’ ‘contain feature(feature name)-value (feature value) pairs’);

“a feature restriction data format decision part for deciding the data format formed to achieve logical operation smoothly, based on the definition information” (Duan: column 6, lines 51-66, ‘lexical connector feature rules 208’ and ‘parsing grammar 212’; Matsui: column 8, lines 23-25, ‘processes ... at the syntactical level’); and

“a conversion part for converting feature restriction information of the natural language pattern into feature restriction data formed to achieve logical operation smoothly, according to the decided data format”, (Duan: column 6, lines 29-56, ‘syntax analysis module 216... to create (interpreted as convert) a syntax parse tree’, ‘feature structure ... is build by combining its child nodes as specified in one or more of the context-free grammar rules’).

As per **claims 37-38**, they recite a method. The rejection is based on the same reason as described for claims 35-36 respectively, because the claim recites same or similar limitation(s) as claims 35-36, respectively.

Conclusion

14. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

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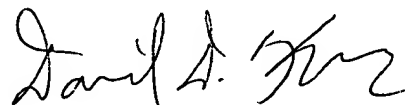
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (703) 305-5631. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645.

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QH/qh
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